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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,571	04/30/2001	Yves Schabes	TGS-00201	5344
7590	09/17/2004		EXAMINER	
			CHOJNACKI, MELLISSA M	
			ART UNIT	PAPER NUMBER
			2175	
DATE MAILED: 09/17/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/845,571	SCHABES ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Mellissa M Chojnacki	2175	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on \_\_\_\_.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution **as to the merits** is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-31 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-31 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

*Shall*  
**SAM RIMELL**  
**MARY EXAMINER**

**Attachment(s)**

1)  Notice of References Cited (PTO-892) ✓  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/1/02, & 7/10/02, ✓

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_ .

## **DETAILED ACTION**

### ***Specification***

1. The arrangement of the disclosed application does not conform with 37 CFR 1.77(b).

Section headings are **boldface** and underlined throughout the disclosed specification.

Section headings should not be underlined or boldfaced. Appropriate corrections are required according to the guidelines provided below:

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.

- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3-11, 14 and 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Brown et al. (U.S. Patent No. 6,665,666).

As to claim 1, Brown et al. teaches a method of answering a question based on information stored on a computer readable medium (See abstract; column 1, lines 22-27) comprising the steps of receiving a question (See column 3, lines 47-60);

parsing the question to obtain an analyzed question (See column 5, lines 7-10; column 11, lines 61-65);

matching the analyzed question to a set of predetermined question patterns to obtain matched question patterns (See column 2, lines 39-43; column 3, lines 66-67; column 4, lines 1-7);

transforming the matched question patterns into one or more partially unspecified statements, wherein each of the partially unspecified statements is missing a portion corresponding to an answer (See column 3, lines 48-60; column 9, lines 38-40);

generating partially unspecified queries corresponding to the partially unspecified statements (See column 3, lines 56-66); and

obtaining answers by matching the partially unspecified queries to stored information (See abstract; column 3, lines 38-67; column 4, lines 1-13).

As to claim 3, Brown et al. teaches collecting answers from matching the partially unspecified queries across a plurality of documents in the stored information (See abstract; column 3, lines 48-60).

As to claim 4, Brown et al. teaches ranking each obtained answer according to its frequency of matching (See column 9, lines 4-10; column 13, lines 11-17).

As to claim 5, Brown et al. teaches wherein the stored information comprises a set of documents and an index identifying which documents within the set of documents

contain terms or groups of terms answering the partially unspecified queries (See abstract; column 1, lines 38-52; column 4, lines 50-53; column 5, lines 33-35, lines 50-57).

As to claim 6, Brown et al. teaches a method of answering a question based on documents stored on a computer readable medium (See abstract) comprising the steps of:

storing contexts for terms, wherein a context occurs in a document;  
receiving a question (See column 3, lines 47-60);  
transforming the question into one or more partially unspecified queries (See column 3, lines 48-60; column 9, lines 38-40); and  
identifying a match or a set of matches for the one or more partially unspecified queries within the contexts, thereby providing an answer or a set of answers for the question (See abstract; column 3, lines 38-67; column 4, lines 1-13).

As to claim 7, Brown et al. teaches a method for answering a question based on information stored on a computer readable medium (See abstract) comprising the steps of:

receiving a question (See column 3, lines 47-60);  
transforming the question into one or more partially unspecified queries (See column 3, lines 48-60; column 9, lines 38-40); and

identifying a match or a set of matches within a body of information stored on a computer-readable medium for each of one or more of the partially unspecified queries, thereby providing an answer or a set of answers for the question (See abstract; column 3, lines 38-67; column 4, lines 1-13).

As to claim 8, Brown et al. teaches wherein the partially unspecified query comprises a partially unspecified term (See abstract; column 4, lines 48-67; column 5, lines 1-32).

As to claim 9, Brown et al. teaches wherein the question contains a question word or phrase and wherein the transforming (See abstract) step comprises: replacing the question word or phrase with a partially unspecified term (See abstract; column 3, lines 60-66, where "partially unspecified term " reads on "QA-Tokens"; column 4, lines 39-43).

As to claim 10, Brown et al. teaches wherein the partially unspecified term comprises a restriction that is determined, at least in part, by the question word or phrase (See abstract; column 4, lines 48-67; column 5, lines 1-32).

As to claim 11, Brown et al. teaches wherein the transforming (See column 3, lines 48-60; column 9, lines 38-40) step comprises:

transforming the question into one or more statement patterns (See abstract; column 3, lines 48-67; column 4, lines 1-7, lines 48-67); and

transforming one or more of the statement patterns into one or more partially unspecified queries (See abstract; column 3, lines 48-67; column 4, lines 1-7, lines 48-67).

As to claim 29, Brown et al. teaches an apparatus for answering a natural language question (See abstract) comprising:

a grammar comprising rules for constructing sentences for grammatical elements (See column 1, lines 30-36)

a parser employing the grammar in analyzing the natural language question and assigning a grammatical identifier to a plurality of grammatical elements in the question (See column 5, lines 3-10; column 11, lines 60-67; column 12, lines 1-7; column 14, lines 34-40);

a set of predetermined question frames for transforming the analyzed question into one or more partially unspecified queries (See abstract; column 3, lines 48-60; column 9, lines 38-40); and

a matching module for determining one or more answers to the natural language question by matching the one or more partially unspecified queries to information stored in a body of documents (See abstract; column 3, lines 38-67; column 4, lines 1-13).

As to claim 30, Brown et al. teaches an apparatus for answering a natural language question (See abstract) comprising:

memory means to store a computer-executable process steps (See column 16, lines 63-65); and

a processor that executes computer-executable process steps so as to receive a question (See column 16, lines 63-65), to transform the question into one or more partially unspecified queries (See abstract; column 3, lines 48-60; column 9, lines 38-40), and

to identify matches for the one or more partially unspecified queries in a body of information, thereby providing an answer to the question (See abstract; column 3, lines 38-67; column 4, lines 1-13).

As to claim 31, Brown et al. teaches computer-executable process steps stored on a computer-readable medium (See abstract), the computer-executable process steps comprising:

code to receive a question (See abstract; where "code" is read on "program"; column 3, lines 47-60);

code to transform the question into a partially unspecified query (See abstract; column 3, lines 48-60; column 9, lines 38-40); and

code to identify a match for the partially unspecified query in a body of information, thereby providing an answer to the question (See abstract; column 3, lines 38-67; column 4, lines 1-13).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 12-15 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (U.S. Patent No. 6,665,666) in view of Kupiec (U.S. Patent No. 5,519,608).

As to claim 2, Brown et al. does not teach transforming matched question patterns into one or more partially unspecified statements using syntactic frames.

Kupiec teaches a method for extracting from a text corpus answers to questions stated in natural language by using linguistic analysis and hypothesis generation (See abstract) in which he teaches transforming matched question patterns into one or more partially unspecified statements using syntactic frames (See column 27, lines 28-33).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have modified Brown et al., to include transforming matched question patterns into one or more partially unspecified statements using syntactic frames.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Brown et al., by the teachings of Kupiec because transforming matched question patterns into one or more partially unspecified

statements using syntactic frames would perform a sequence of queries designed to include the optimal query or queries needed to answer a user's natural language question (See Kupiec, column 2, lines 14-21).

As to claim 12, Brown et al. as modified, teaches generating additional partially unspecified queries by using a thesaurus (See Brown et al., column 5, lines 27-32; also see Kupiec, column 27, lines 34-44); and

identifying a match or a set of matches within a body of information stored on a computer-readable medium for each of one or more of the additional partially unspecified queries (See Brown et al., abstract; column 3, lines 38-67; column 4, lines 1-13).

As to claim 13, Brown et al. as modified, teaches wherein the thesaurus comprises a contextual thesaurus (See Brown et al., column 5, lines 27-32; also see Kupiec, column 27, lines 34-44).

As to claim 14, Brown et al. teaches identifying a match or a set of matches for each of a plurality of partially unspecified queries (See abstract), further comprising the step of:

combining the matches or sets of matches identified for each of a plurality of partially unspecified queries, thereby generating a combined result set for the question (See abstract; column 3, lines 48-67; column 4, lines 1-7).

As to claim 15, Brown et al. teaches wherein the identifying step comprises identifying a match or a set of matches for each of a plurality of partially unspecified queries (See abstract), further comprising the steps of:

extracting a portion of each of a plurality of the identified matches (See abstract; column 14, lines 3-6); and  
combining the extracted portions, thereby generating a combined result set for the question (See abstract; column 14, lines 3-16).

As to claim 25, Brown et al. teaches ranking the results in the combined result set (See column 3, lines 22-26; column 9, lines 4-9).

As to claim 26, Brown et al. teaches outputting some or all of the results in the combined result set in an order determined, at least in part, by the ranking (See column 3, lines 22-26; column 7, lines 51-55; column 9, lines 4-9).

As to claims 27 and 28, Brown et al. teaches outputting an identifier or location of a document that contains a result (See abstract; column 3, lines 48-67; column 4, lines 1-13).

7. Claims 16-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (U.S. Patent No. 6,665,666) in view of Kupiec (U.S. Patent No. 5,519,608),

as applied to claims 2, 2-15 and 25-28 above, and further in view of de Hita et al. (U.S. Patent No. 6,081,774).

As to claim 16, Brown et al. as modified, teaches (b) simplifying the question (See column 14, lines 3-22);

Brown et al. as modified, still does not teach wherein the first transforming step comprises one or more of the following: (a) analyzing the question, wherein the analyzing step comprises assigning a grammatical label to each of a plurality of elements in the question; (b) simplifying the question; (c) assigning an identifier to some or all of the grammatical labels in the question either before or after simplifying the question, thereby generating a processed question.

de Hita et al. teaches a natural language information retrieval system and method (See abstract) in which he teaches wherein the first transforming step comprises one or more of the following:

(a) analyzing the question, wherein the analyzing step comprises assigning a grammatical label to each of a plurality of elements in the question (See column 4, lines 24-32; column 19, lines 39-50);

(c) assigning an identifier to some or all of the grammatical labels in the question either before or after simplifying the question, thereby generating a processed question (See column 4, lines 24-32; column 19, lines 39-50).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have modified Brown et al. as modified, to include wherein the first transforming step comprises one or more of the following: (a)

analyzing the question, wherein the analyzing step comprises assigning a grammatical label to each of a plurality of elements in the question; (c) assigning an identifier to some or all of the grammatical labels in the question either before or after simplifying the question, thereby generating a processed question.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Brown et al. as modified, by the teachings of de Hita et al. because wherein the first transforming step comprises one or more of the following: (a) analyzing the question, wherein the analyzing step comprises assigning a grammatical label to each of a plurality of elements in the question; (c) assigning an identifier to some or all of the grammatical labels in the question either before or after simplifying the question, thereby generating a processed question would efficiently retrieve information that accurately represents the content of both the text being searched, and the user's query, in such a way that the two can be more effectively matched (See de Hita et al., column 2, lines 29-33).

As to claim 17, Brown et al. as modified, teaches wherein a different identifier is assigned to each subject element, each object element, and each preposition element in the processed question, thereby uniquely identifying each subject element, each object element, and each preposition element in the processed question (See Brown et al., column 4, lines 40-67; column 5, lines 1-26).

As to claim 18, Brown et al. teaches wherein the identifiers are numbers (See de Hita et al., column 15, lines 48-55).

As to claim 19, Brown et al. as modified, teaches wherein the first transforming step comprises:

selecting one or more of a plurality of categories for the question or processed question, wherein a category comprises a set of sentence patterns that are grammatically related to one another, the sentence patterns each including one or more statement patterns (See Brown et al., column 2, lines 39-43; column 3, lines 66-67; column 4, lines 1-7; also see de Hita et al., column 4, lines 16-32; column 19, lines 39-50); and

selecting one or more of the statement patterns from the one or more categories (See de Hita et al., column 4, lines 16-23; column 10, lines 28-36; column 14, lines 63-67; column 15, lines 1-29).

As to claim 20, Brown et al. as modified, teaches replacing a grammatical label in one or more of the selected sentence patterns with a partially unspecified term (See Brown et al., column 2, lines 39-43; column 3, lines 66-67; column 4, lines 1-7; also see de Hita et al., column 4, lines 16-32; column 19, lines 39-50); and

replacing the remaining grammatical labels in the one or more selected sentence patterns with the corresponding elements from the question, thereby generating one or

more partially unspecified queries (See Brown et al., column 3, lines 56-66; also see de Hita et al., column 4, lines 16-32; column 19, lines 39-50).

As to claim 21, Brown et al. as modified, teaches adding grammatical labels indicating grammatically acceptable positions for modifiers to the selected sentence patterns (See Hita et al., column 4, lines 16-32; column 19, lines 39-50); replacing a grammatical label in one or more of the selected sentence patterns with a partially unspecified term (See Brown et al., column 2, lines 39-43; column 3, lines 66-67; column 4, lines 1-7; also see de Hita et al., column 4, lines 16-32; column 19, lines 39-50); and

replacing the remaining grammatical labels in the one or more selected sentence patterns with the corresponding elements from the question, thereby generating one or more partially unspecified queries (See Brown et al., column 3, lines 56-66; also see de Hita et al., column 4, lines 16-32; column 19, lines 39-50).

As to claim 22, Brown et al. as modified, teaches wherein the sentence patterns comprising a set of sentence patterns are grammatically related to one another in that each sentence pattern comprises a transformed version of a base sentence pattern, the base sentence pattern comprising one or more grammatical labels selected from the list consisting of subject elements, verb elements, object elements, and preposition elements and each transformed version comprises the same subject elements, verb elements, object elements, and preposition elements as the base sentence pattern (See

de Hita et al., column 4, lines 16-32; column 11, lines 3-19; column 13, lines 16-35; column 16, lines 18-67; column 17, lines 1-10, where “transformed” is read on “change”; column 19, lines 39-50).

As to claim 23, Brown et al. as modified, teaches wherein a transformed version is derivable from a base sentence pattern by subject the subject elements, verb elements, object elements, and preposition elements of the base sentence pattern. See de Hita et al., column 4, lines 16-32; column 11, lines 3-19; column 13, lines 16-35; column 16, lines 18-67; column 17, lines 1-10, where “transformed” is read on “change”; column 19, lines 39-50) to one or more of the following operations:

(a) permutation of the order of the elements (See de Hita et al., column 11, lines 3-7);

(b) modification of the voice or aspect of a verb element (See de Hita et al., column 3, lines 40-50); and

(c) addition of further grammatical labels, so as to generate a grammatically acceptable variant of the base sentence pattern (See Hita et al., column 4, lines 16-32; column 19, lines 39-50).

As to claim 24, Brown et al. as modified, teaches wherein the simplifying step comprises performing one or more of the following operations on the question after analyzing the question:

- (a) removing some or all auxiliary verbs and their corresponding grammatical identifiers (See Brown et al., column 3, lines 48-67; column 4, lines 1-7);
- (b) removing some or all words that appeared in the original question while retaining their corresponding grammatical identifiers (See Brown et al., column 3, lines 48-67; column 4, lines 1-7); and
- (c)
  - (i) removing some or all words that form part off a noun phrase (See Hita et al., column 18, lines 63-67; column 1-38);
  - (ii) removing the grammatical identifiers for the words removed in step (i) (See Brown et al., column 3, lines 48-67; column 4, lines 1-7); and
  - (iii) retaining the grammatical identifier for the noun phrase (See Hita et al., column 18, lines 63-67; column 1-10).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mellissa M Chojnacki whose telephone number is 730-305-8769. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on 703-305-3830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mmc  
September 7, 2004



**SAM RIMELL**  
PRIMARY EXAMINER